ECON 204 Sec 02
Quiz 2
Dr. Kevin Hasker

1. *(5 Points)* **Honor Code:** Please read and sign the following statement:
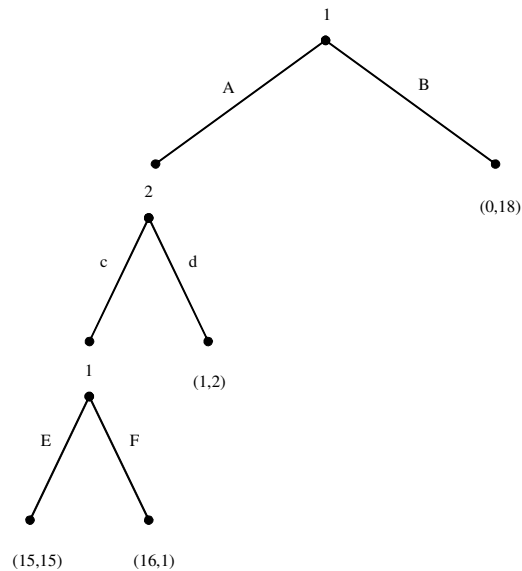
   I promise that my answers to this test are based on my own work without reference to any notes, books, or the assistance of any other person during the test. As well, I will not assist others nor use a calculator or other electronic device.
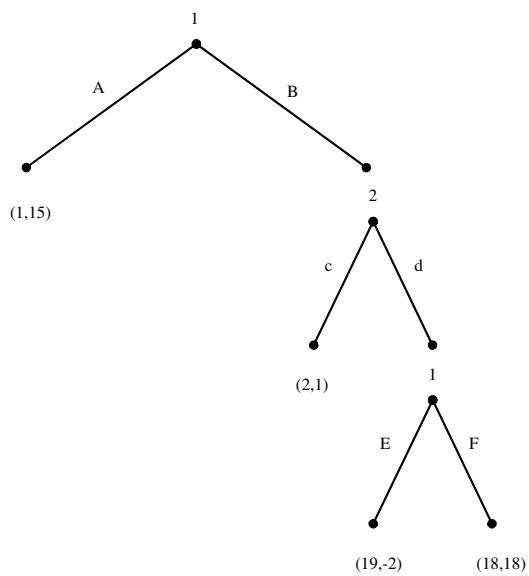
   Name and Surname: _

   Student ID: _

   Signature:

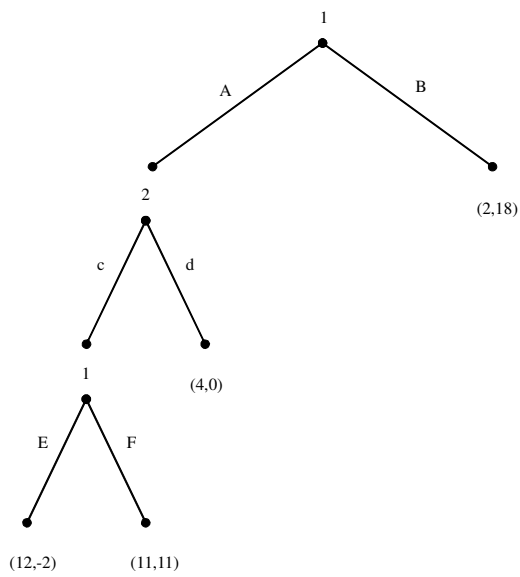   _

2. *(15 points total)* Consider the following sequential game. First Player 1 chooses between the actions A and B, and so on. After each string of actions we write the utilities (u_1, u_2).
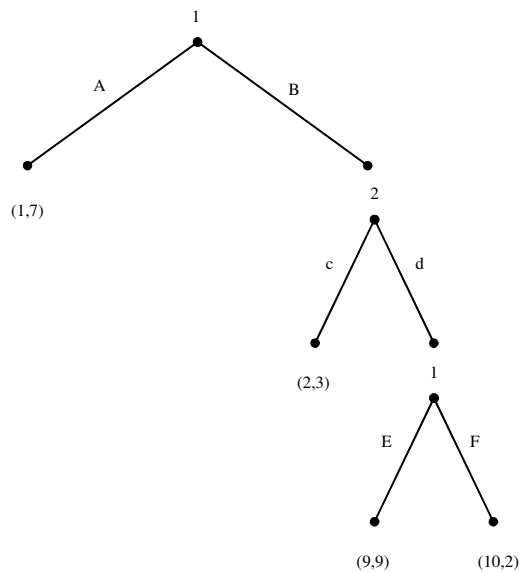

$$SPE = \{(A, F), d\}$$

$$SPE \quad = \quad (B, E), c$$

$$SPE \quad = \quad (A, E), d$$

$$SPE = (A, F), c$$

(a) *(6 points)* For each player write out that player's strategies.

Solution 1 $S_1 = \{A, B\} \times \{E, F\} = \{(A, E), (A, F), (B, E), (B, F)\}$
$S_2 = \{c, d\}$

(b) *(3 points)* Find the subgame perfect equilibrium strategies by backward induction. *You may mark them on the table above, but you should also write them out below.*

Solution 2 *I simply wrote the SPE below each game above, these should also be the solutions here.*

(c) *(1 points)* What is the equilibrium outcome or payoff for each player?

Solution 3 *This is immediate from the SPE, in both cases each player will only get to take one action.*

(d) *(3 points)* What are the subgame perfect equilibrium strategies?

Solution 4 *I am not all that particular about how they write these out, as long as they list all three actions.*

(e) *(2 points)* Explain why writing down the outcome in this game is not enough, i.e. why the extra information in the strategies is necessary.

Solution 5 *The outcome makes no sense without knowing the full strategy. The only reason P2's choice makes any sense is because P1 will **not** choose the symmetric Pareto efficient outcome in the next stage.*